



Engineer and Developer Forum

Customer Engineering – Large Commercial

CPS Energy Rochelle Training Center

4514 Frank Bryant Lane

SAN ANTONIO, TEXAS 78220

May 11, 2018

8:00 AM TO 11:00 AM

The purpose of this forum is to open a line of communication with engineers and developers working on large commercial/industrial developments within the CPS Energy service area. CPS Energy will share processes and new initiatives, followed by a Q&A session.



Agenda

- Welcome and Safety Message – Shawn Cobb
- Commercial Service Application – Jonathan Fleming
- Large Commercial Process – Robert Payne
- Engineering Drawing Details and Construction Standards – Shawn Cobb
- AMI Meter Initiative and Current Status – Guillermo De Hoyos
- New CSI Project and Customer Web Portal (CWP) – Lori Lopez
- Overview of ESMS Roles in Service Designs – Tony Valdez

Commercial Service Application

Presented by:

Jonathan Fleming
Manager of Industrial Design

Customer Engineering –
Large Commercial





Commercial Service Application

Please email the completed application to ce@cpsenergy.com or call 210-353-4050 for mailing or delivery instructions.



Commercial Service Application

Instructions: Please complete the Application, Load Sheet, and Environmental Checklist
All applications submitted will follow the Commercial Service process.

| | | |
|-----------------------------------------|-------------------------------|---------------|
| Application Date: | Customer Need by Date: | |
| Project Name: | | |
| Proposed Location/Address: | | |
| Owner Name^(Required): | Phone: | Email: |
| : | Phone: | Email: |
| : | Phone: | Email: |
| : | Phone: | Email: |
| : | Phone: | Email: |

Business Type:

Requested Service Type:

Square Footage:

Service Voltage:



Commercial Service Application

Customer Information

Customer of Record:

Phone:

Billing Address:

Open Charge: Yes No

Tax ID#:

Checklist:

Comments:

Load Sheet

SWPPP (> 1 Acre Disturbed)

Site Plan

Sealed Plans(> 400amps)

Meter Loop Drawing

Environmental Checklist

Motor Load Detailed Information

Trench/Ductbank Requirements

[Electric Service Standards "Click Here"](#)

[Gas Service Standards "Click Here"](#)

Customer Signature

Commercial Service Application



**CUSTOMER LOAD
INFORMATION**



Project\Business:
Address:

| ELECTRICAL EQUIPMENT | |
|----------------------|----|
| | VA |
| A/C or HEATING * | |
| LIGHTING | |
| RECEPTACLES | |
| WATER HEATER | |
| COMPUTERS | |
| REFRIGERATION | |
| ELEVATORS | |
| MOTORS - Hard Start | |
| OTHER | |
| | |
| | |
| TOTAL | |



Commercial Service Application

GAS EQUIPMENT

| <i>Pressure Required</i> _____ | BTU |
|--------------------------------|------------|
| FURNACE | |
| BOILER | |
| COOKING | |
| WATER HEATER | |
| POOL\SPA HEATER | |
| GAS LIGHTING | |
| OTHER EQUIPMENT | |
| | |
| TOTAL | |

*Largest HVAC load



Commercial Service Application

Instructions: For each Environmental Category below, please check the one box that applies and specify whether CPS Energy's offsite work will be covered in customer's permits/plans.

| Environmental Category | Environmental Form | Copy of form provided with Application | Copy of form to be provided after Application | Form Not Applicable | CPS offsite work covered? Y/N/TBD |
|--------------------------------------------|----------------------------------------------------------|----------------------------------------|-----------------------------------------------|--------------------------|-----------------------------------|
| Storm Water Pollution Prevention | Storm Water Pollution Prevention Plan | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Endangered Species Act (Karst Zones 1 & 2) | Habitat Compliance Form | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Endangered Species Act (Songbirds) | Habitat Compliance Form, and | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| | Tree Permit or Tree Affidavit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Waters of the US | Individual or Nationwide Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Cultural and Historic Resources | Cultural and Historic Resources Letter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Edwards Aquifer | Water Pollution Abatement Plan or Contributing Zone Plan | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |
| Other (Specify): _____ | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ___ |

Federal Project Yes No

Comments:

Signature: _____

Printed Name: _____

Date: _____





Large Commercial Process

Presented by:

Robert Payne, P.E.
Manager of Industrial Projects

Customer Engineering – Large Commercial

Large Commercial Process



- Post Application Process.
- Review by Supervisor.
- Assign BCA (project) to Industrial Coordinator (AKA Customer Facing Designer).
- Prep work.
- Coordinator will review application package for missing items.
- Industrial Coordinator will sketch proposed route based on GIS map.
- Predesign meeting with customer.
- Start design (40 business day duration) begins.
- Final design and Invoice for OH/UG emailed to customer. (End of 40 business day duration)
- Customer submits payment.
- Scheduling department notifies construction to stage material. (2-3 weeks pending weather)
- Appropriate Crew starts work.
- Meter can / Meter service Order

Large Commercial Process



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Large Commercial Process



Assign BCA (project) to Industrial Coordinator (AKA Customer Facing Designer).

- Industrial Coordinator will be the main POC.
- New Address creation (+3 days)
- City: COSA creates the address.
- County: CPS Energy creates the address after plat approval

Large Commercial Process



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Large Commercial Process



Prep work

- POC will create Work Request.
- Submit site plan and Environmental documents to Environmental department for review.
 - SWPPP, NOI
 - Tree Ordinance
 - Song Bird
 - Karst (Cave-like features)
 - TCEQ approval letter
 - Habitat Compliance document
 - Erosion Control
- Submit electrical load to Distribution Planning (DP) for capacity review.

Large Commercial Process



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Large Commercial Process



Coordinator will review application package for missing items.

- Request for missing documents via email and/or phone call.
 - Electric/Gas Utility Site Plan
 - Proposed routes for Electric/Gas (if decided)
 - Proposed transformer location (x, y distance from fixed structure)
 - Existing/Proposed utilities
 - Electric/Gas One-Line Diagram
 - Electric/Gas Load Form
 - Electric/Gas Load Summary (Page 3 of application)
 - Plumbing Schedule (Gas)
 - School Gas Form (If applicable)
 - Environmental Forms
 - Meter Loop Diagram

Large Commercial Process



Continued

Request for missing documents via email and/or phone call.

- Motor Load Form (Starting and Operating Schedule if available)
 - CPS Energy Electric Service Standards: Section 300 for provisions in accordance with CPS Standards.
 - Institute of Electrical and Electronic Engineers IEEE 519
 - Voltage Flicker 3%
 - Total Harmonic Distortion (THD) < 5% of 60 Hz (Fund. Frequency)
 - Any individual harmonic < 3% of 60 Hz (Fund. Frequency)
 - Motors (10 – 100) horsepower limited to 300% of rated FLA
 - Exception: Motors (10 – 25) hp, start up < 4 times per hour
- Distributed Generator Form completed (if applicable)
- CAD file

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Large Commercial Process



Industrial Coordinator will sketch proposed route based on GIS map
Predesign meeting with customer (On-site if necessary)

- Construction personnel may be present to provide suggestions.
- Notify customer if Easements are required.
- Give Customer the contact information of the Right-Of-Way (ROW) agent.

Large Commercial Process



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Large Commercial Process



Start design (40 day duration) begins.

- Pull Permits:
- COSA, TXDOT, Historical (CRAG 36 Sq. Mi.), Tree, Environmental

Final design and Invoice for OH/UG emailed to customer. (End of 40 day duration)

Customer submits payment in person at 1 of 4 locations

- Southside Customer Service Center, 660 SW Military Dr. Ste. X, San Antonio TX 78221
 - Westside Customer Service Center, 803 Castroville Rd. Ste. 406, San Antonio TX 78237
 - Northside Customer Service Center, 7000 San Pedro, San Antonio TX 78216
 - Eastside Customer Service Center, 4525 Rigsby Ave, Ste. 112, San Antonio TX 78222
 - Or electronically via ACH
- Customer to stake pole locations, transformer pad location, and easements on their property.

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- **Appropriate Crew starts work.**
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Large Commercial Process



Scheduling department notifies construction to stage material. (2-3 weeks pending weather)

- Over Head Line construction to start after payment received.
 - 16 business days for projects < 3 poles.
- Underground not released to construction after payment.
 - Pre and Post pour inspection of ductbank and transformer slab by CPS Energy.
 - CPS Energy UG crew will provide:
 - Primary conductor and labor to pull conductor.
 - Pad mount transformer

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- **Meter can / Meter service Order**

Large Commercial Process



Large Commercial Process – Robert Payne

Meter Can Order (Concurrent with Prep work)

- ESMS will review the one-line diagram.
- Create Meter Can Work Request.
- Service Foreman will notify Industrial Coordinator and/or Customer when meter can is available to pick up.
- Customer will pick up Meter Can at 501 South Salado St.
- Customer will install and stencil address and suite number.

Meter Service

- COSA Permit required to work on secondary (service) voltage.
- COSA finalize the permit.
- CPS Energy to inspect meter set up, and stab in meter.



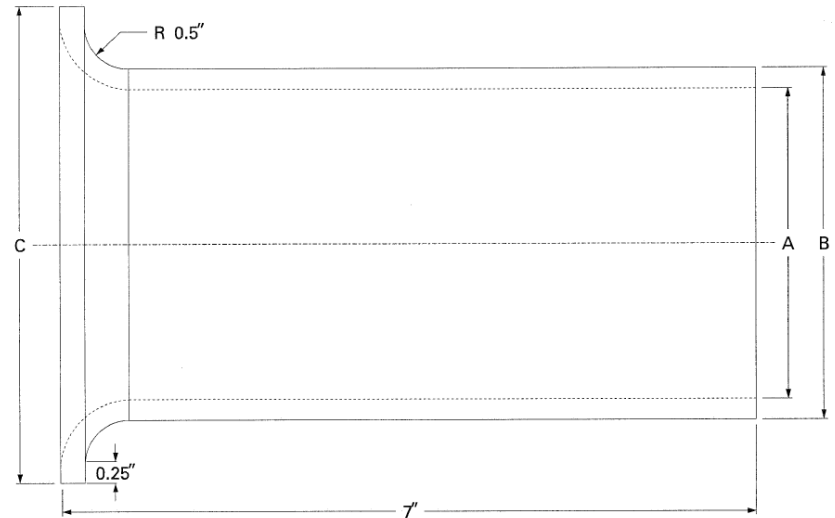


Engineering Drawings and Standards

Presented by:
Shawn Cobb, P.E.
Manager

Customer Engineering – Large
Commercial / Multi-Family

- Manhole Spec
- Manhole Details
- Bell End Spec
- Ductbank Details

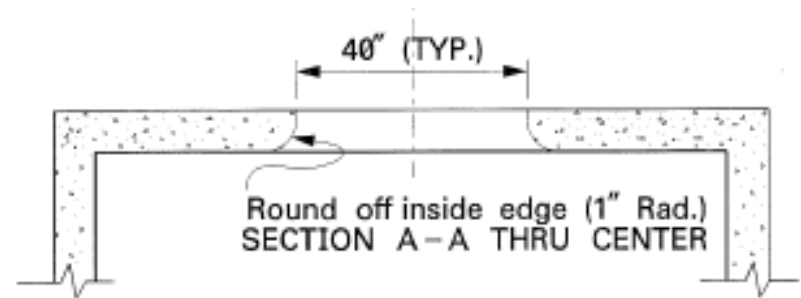
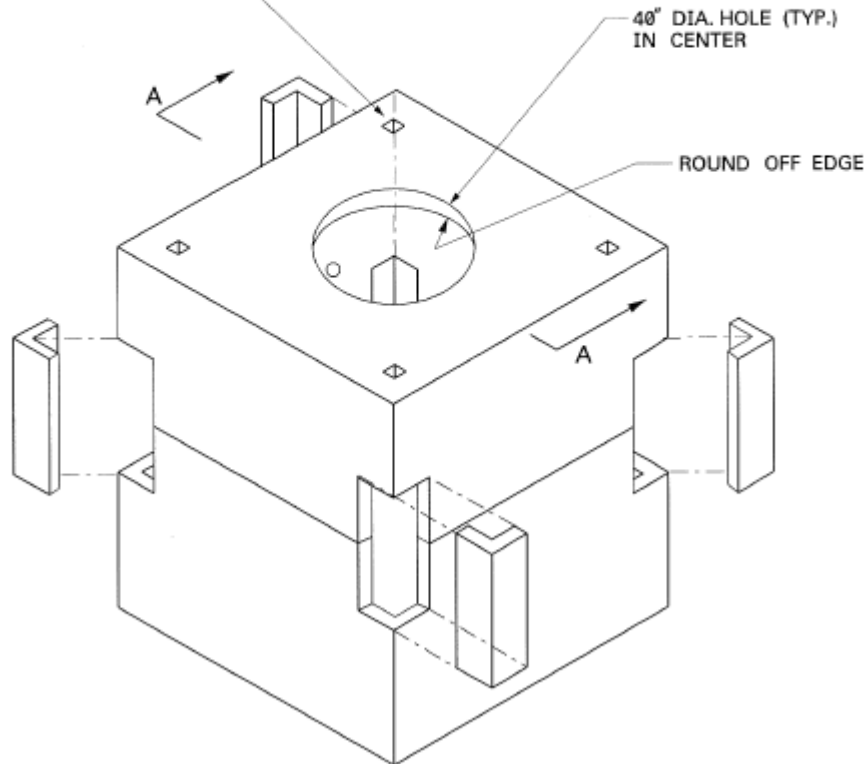


| CPS ENERGY MATERIAL NO. | NOMINAL SIZE | A | B | C |
|-------------------------|--------------|-------|-------|------|
| 1026991 | 3" | 3.07" | 3.50" | 5.0" |
| 1026992 | 4" | 4.03" | 4.50" | 6.0" |
| 1026994 | 5" | 5.05" | 5.56" | 7.1" |

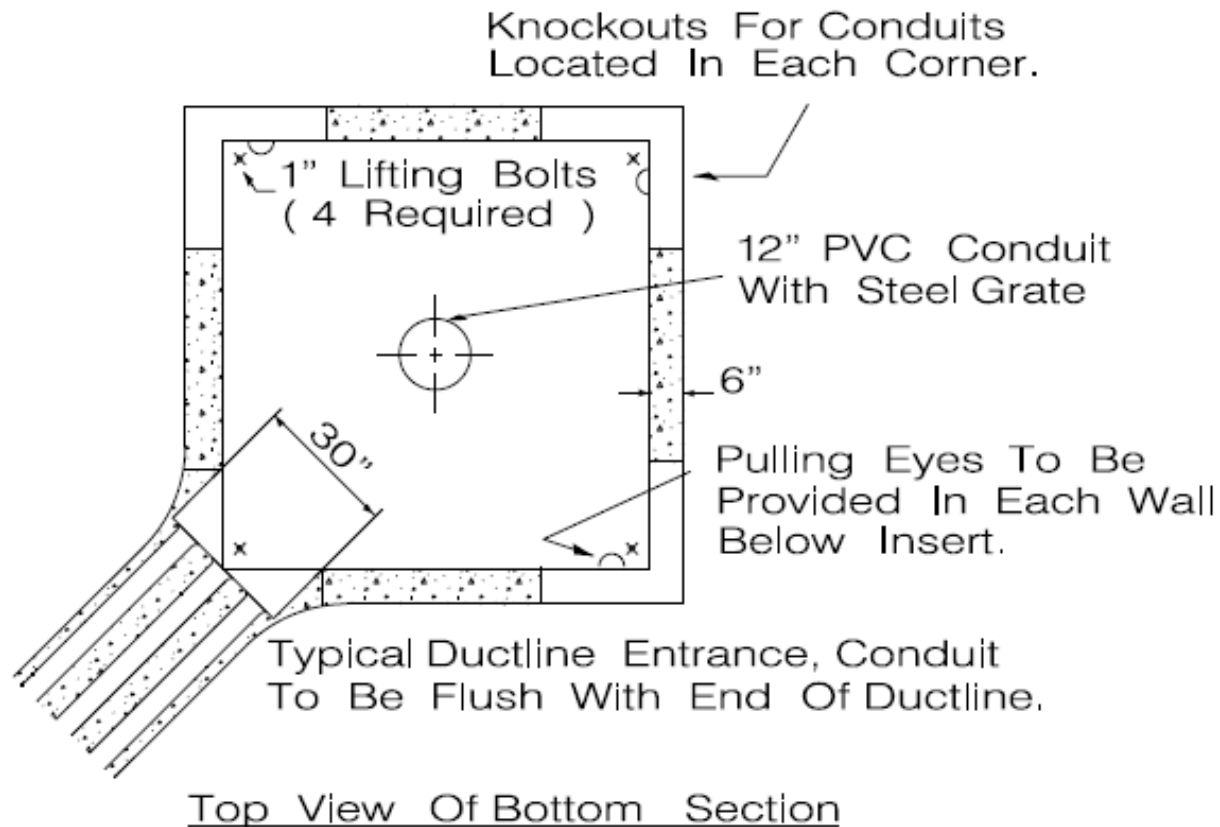
- Manhole Spec (349-04)

TYPICAL PRECAST MANHOLE

FOUR LIFTING INSERTS ARE REQUIRED AND ARE LOCATED IN THE CORNERS.



- Manhole Details (on job sketch)



Engineering Drawings and Standards



- Manhole Details (on job sketch)

Customer Notes

Customer shall supply and install a traffic bearing cast iron ring and cover marked "ELECTRIC". The ring and cover shall have a 36" diameter opening.

Customer shall supply and install a 42" Diameter Neck extension, in addition to a brick collar, (Plastered and sealed) 2 rows high min. 5 row high max., between the roof of the manhole and the bottom of the ring and cover. The minimum cover from final grade to top of manhole shall be 36".

Customer shall install a 7' X 7' X 1' concrete apron around the ring and cover. See apron detail

Conduits entering manhole shall have bell ends.

Customer shall supply and install steel grate for sump opening.

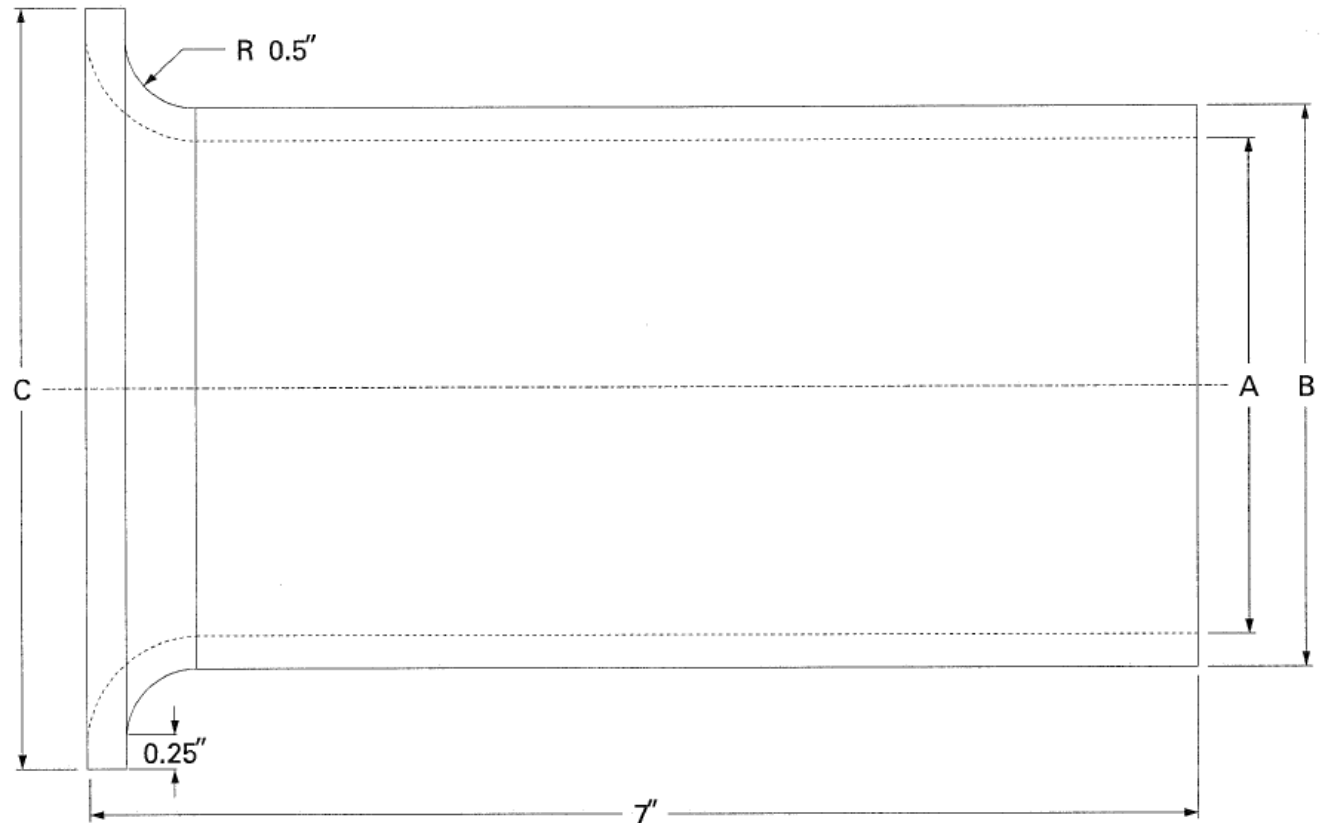
Customer shall supply and install 300 PSI flowable fill around entire manhole up to the top of the neck.

Customer must ensure manhole is level by stabilizing floor with 4 inches of compacted base material while providing a 24" by 24" square void required for sump pump by using 2x4 inch lumber.

Engineering Drawings and Standards

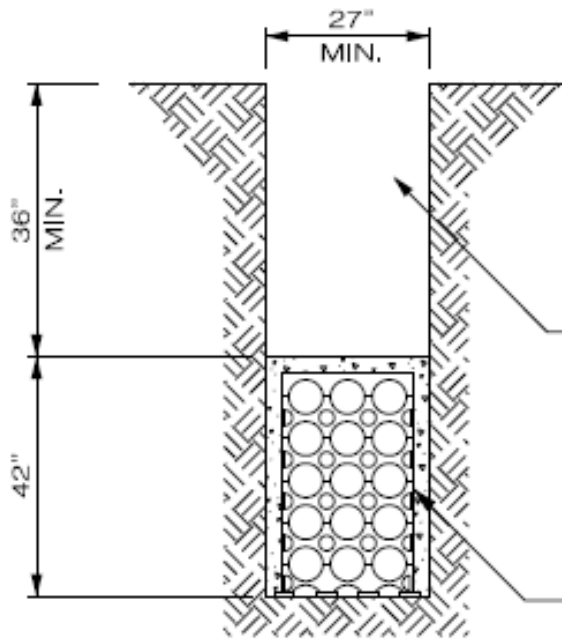


- Bell End (Conduit Fitting) Spec (730-02)

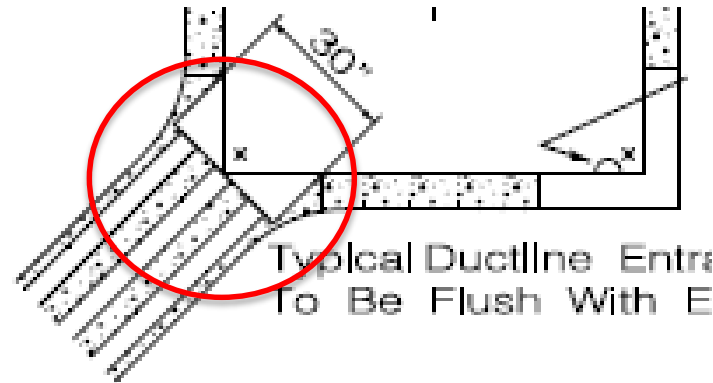


| NOMINAL SIZE | A | B | C |
|--------------|-------|-------|------|
| 3" | 3.07" | 3.50" | 5.0" |
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- Ductbank Details (on job sketch)
 - Forming Manhole Window



DUCTLINE DETAIL
15-4" CONDUITS



Typical Ductline Entry
To Be Flush With E

Asphalt & Flowable Fill will be Required when Duct Bank is Installed in a Drivable area

Schedule 40 PVC conduits with 3" spacers every four feet to be encased in 2000 PSI pea gravel concrete.





AMI Meter Initiative and Current Status

Presented by:

Guillermo De Hoyos, P.E.
Interim Director

Metering Services

AMI Meter Initiative and Current Status



- 712,000 electric AMI installs
- AMI deployment 96% complete
- 711,000 electric AMI meters are read/billed over the air
 - No longer need a monthly physical meter reader
- AMI allows the visibility to identify if an electric meter has loss of power
 - Sustained outage results in a truck roll to address outage
 - If meter is removed without contacting CPS Energy and without pulling a permit, CPSE will roll a truck to make a site visit to address false outage





Overview of Electric Service and Metering Standards Roles in Service Designs

Presented by:

Tony Valdez
Manager

Electric Service and Metering
Standards

- Overview of Electric Service and Metering Standards Roles in Service Designs
 - Interpret and application of the Electric Service Standards
 - Updates due out 2018
 - Review designed one-lines for Customers
 - Recommend/size appropriate metering equipment
 - Define Point of Demarcation (POD)
 - POD does not necessarily define meter location
 - Use of Service - CPS Energy Rules and Regulations, Feb 1,2017
 - Customer shall not extend or connect Customer's Installation to electric lines over or under a street, alley, lane, court or avenue or other public or private space in order to obtain Service for separated property through one Meter even though such separate property may be owned by Customer.

Questions?



Thank You..

San Antonio, Texas